UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES R. TRETHEWEY

Appeal 2007-1099
Application 09/955,469
Technology Center 2100

Decided: June 12, 2007

Before LEE E. BARRETT, LANCE LEONARD BARRY, and ST. JOHN COURTENAY III, *Administrative Patent Judges.*

COURTENAY, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-40. It is our view, after consideration of the record before us, that the evidence relied upon does not support the Examiner's rejection of the claims on appeal. Accordingly, we REVERSE.

THE INVENTION

The disclosed invention relates generally to server-based software applications that involve latency-sensitive message traffic over a packet-switched network such as the Internet (Specification 1). More particularly, the disclosed invention provides load balancing among similarly functioning software applications residing on parallel servers, while avoiding the problem of a load-balancing device becoming a bottleneck for message traffic from users to the servers. The disclosed invention also provides fault tolerance methods for these types of server-based software applications (Specification 3).

Independent claim 1 is illustrative:

1. A method of providing a remote networked computer with a service session using one of a plurality of similarly functioning software applications residing on different servers with different unique real network addresses, the method comprising:

receiving, from the remote computer and at a device having a unique network address that is different from the network address of any of the servers, a packet-based message comprising a request for a service session;

assigning one of the several servers to be used by the remote computer in the service session; and

transmitting, to the remote computer, a packet-based message comprising the unique real network address of the assigned server for the remote user to address subsequent messages during the service session.

THE REFERENCES

The Examiner relies upon the following references as evidence of unpatentability:

Brendel	US 5,774,660	Jun. 30, 1998
Bowman-Amuah	US 6,289,382 B1	Sep. 11, 2001
Bruck	US 6,801,949 B1	Oct. 5, 2004

THE REJECTIONS

Appellant seeks our review of the following rejections:

1. Claims 1-5, 9-20, and 24-34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Bruck in view of Brendel (Answer 3).
2. Claims 6-8, 21-23, and 35-40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Bruck in view of Brendel, and further in view of Bowman-Amuah (Answer 10).

Rather than repeat the arguments of Appellant or the Examiner, we make reference to the Briefs and the Answer for the respective details thereof.

Independent claim 1

We consider first the Examiner's rejection of independent claim 1 as being unpatentable over Bruck in view of Brendel.

Appellant argues that neither Bruck nor Brendel teaches a method *wherein a message comprising a unique real network address of an assigned server for a service session is transmitted to a remote computer*, as required by the language of the claim (Br. 5, emphasis in original). Appellant notes that the claimed transmission of a real network address of the assigned server to a remote computer is performed to *avoid the load balancer altogether in subsequent transmissions from the remote computer to the assigned server during the server session* (Br. 7, emphasis added). Thus, subsequent communications [i.e., occurring after the initial communication from the remote computer to the load balancer] are performed directly between the remote computer [i.e., client] and the assigned server (Br. 7). Appellant points out that subsequent [direct] communications between the remote computer and the assigned server prevent the load balancer from becoming a bottleneck (*id.*).

Appellant further argues that Bruck and Brendel both teach away from a remote computer [i.e., client] using the real network address of an assigned server during a service session. Appellant points out that in both Bruck and Brendel, all remote user transmissions are directed *to the server system's load balancer* (or load balancing "front layer server system" as it is called in Bruck) (Br. 7, emphasis in original).

The Examiner disagrees. The Examiner argues that Bruck teaches a packet-based message comprising the unique network address of the assigned server (i.e., using dynamically assignable Internet Protocol (IP) addresses for each subnet) to enable the remote user (i.e., client) to address subsequent messages during the service session. The Examiner points out

that Bruck's servers can dynamically reconfigure assignments of virtual IP addresses among themselves to provide enhanced network availability and improved server response to clients over the Internet (*see* Bruck, col. 7, l. 11 through col. 8, l. 49, Fig. 3) (Answer 14).

The Examiner relies upon the secondary Brendel reference for the teaching of a real [i.e., physical] network server address. The Examiner concludes that it would have been obvious to one of the ordinary skill in the art to implement Brendel's real network server address in Bruck's distributed server cluster because such modification would have allowed [Bruck's] routers to use the real IP address of the *assigned server* to route data packets to the *assigned server* and thus balance the load on each server (*see* Brendel, col. 76, ll. 46-63) (Answer 14-15).

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). "[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability." *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Furthermore, "'there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness' . . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of

ordinary skill in the art would employ." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)).

We begin our analysis by noting that Bruck teaches a scalable load-balancing solution for server clusters that replaces a prior art single load-balancing computer (*see* col. 2, ll. 6-35). The prior art single load-balancing computer disadvantageously provided a single point of failure (*id.*). We note that Bruck teaches a front server layer (*see* Fig. 2, servers 206, 208, 210, and 212) and a back-end server layer (*see* Fig. 2, servers 220, 222, 224, and 226). In particular, Bruck teaches the front server layer performs fail-over and *dynamic load balancing* for both server layers (col. 2, ll. 44-45). Bruck teaches the back-end servers function as Web file servers, FTP servers, or application servers (*see* Fig. 2, servers 220, 222, 224, and 226, *see also* col. 2, ll. 38-43).

Bruck further teaches the front server layer provides a resilient network connection in which network addresses can be moved among the cluster machines *without breaking network connections between clients and the servers* (*see* col. 2, l. 66 through col. 3, l. 3, emphasis added). In particular, Bruck teaches "the system provides symmetric routing of network traffic, guaranteeing that the *incoming and outgoing traffic of the same network connection goes through the same front-layer server*" [i.e., in the absence of a front-layer server failure] (*see* col. 3, ll. 15-18, col. 6, ll. 61-65, emphasis added).

In the case of a front-layer server failure, Bruck teaches the server cluster provides a distributed network address translation (NAT) function

among the front-layer machines (*see* col. 3, ll. 3-5). Thus, Bruck's front-layer servers communicate with each other such that *automatic dynamic traffic assignment reconfiguration* occurs in response to machines being added or deleted from the cluster with *no loss in functionality* (*see* col. 3, ll. 25-29).

After carefully reviewing the evidence before us, we find that Bruck's front server layer (functioning as a load balancer) maintains a persistent connection between a particular client and a particular front-layer server (i.e., load balancer) during a user session, so long as the particular front-layer server does not fail. We note that alternate embodiments disclosed by Bruck show data being passed to the servers after first passing through a router (*see e.g.,* col. 8, ll. 22-27, Fig. 3, col. 28, ll. 29-30, Fig. 15, and col. 34, ll. 1-4, Fig. 21). Thus, we find that Bruck's client transmissions (i.e., from a remote user) are directed *to the server system's load balancer* (i.e., the load balancing "front layer server system" shown in fig. 2).

After carefully reviewing the Bruck reference in its entirety, we find no teaching where a packet-based message comprising the real (i.e., physical) network address of the *assigned server* for the remote (i.e., client) computer is transmitted to the remote computer *for the remote user to address subsequent messages during the service session*, as required by the language of the claim.

We note the Examiner merely relies upon the secondary Brendel reference for its teaching of a real (i.e., physical) network server address (*see* Answer 4, *see also* Brendel, Fig. 17, abstract, col. 16, l. 46 through col. 17, l. 57). While we agree with the Examiner that Brendel teaches the real

network address of a server (*see* Brendel, Fig. 17, col. 16, ll. 49-53), we nevertheless find that Brendel fails to overcome the deficiencies of Bruck.

Therefore, we find the evidence supports Appellant's contention that in both Bruck and Brendel, all of the remote user transmissions are directed *to the server system's load balancer* (or equivalent load balancing "front layer server system" as taught by Bruck) (*see* Br. 7). For at least the aforementioned reasons, we agree with Appellant that the Examiner has failed to meet the burden of presenting a prima facie case of obviousness. Accordingly, we will reverse the Examiner's rejection of independent claim 1 as being unpatentable over Bruck in view of Brendel.

Because independent claims 17 and 30 each recite equivalent limitations, we will also reverse the Examiner's rejection of these claims as being unpatentable over Bruck in view of Brendel for the same reasons discussed *supra* with respect to claim 1.

With respect to the rejection of independent claim 35, we note the Examiner merely relies upon the tertiary Bowman-Amuah reference for its teaching of Internet telephony service, and multiple-user gaming and music-sharing applications (*see* Answer 12). After carefully reviewing the Bowman-Amuah reference, we find nothing in Bowman-Amuah that overcomes the deficiencies of Bruck as modified by Brendel, as discussed *supra* with respect to claim 1. Because independent claim 35 recites equivalent limitations to independent claims 1, 17, and 30, we will also reverse the Examiner's rejection of claim 35 as being unpatentable over Bruck in view of Brendel, and further in view of Bowman-Amuah for the same reasons discussed *supra* with respect to claim 1.

Because we have reversed the Examiner's rejection of each independent claim, we will not sustain the Examiner's rejection of any dependent claims under appeal. Therefore, we reverse the Examiner's rejection of dependent claims 2-5, 9-16, 18-20, 24-29, and 31-34 as being unpatentable over Bruck in view of Brendel. Likewise, we reverse the Examiner's rejection of dependent claims 6-8, 21-23, and 36-40 as being unpatentable over Bruck in view of Brendel, and further in view of Bowman-Amuah.

DECISION

In summary, we will not sustain the Examiner's rejection of any claims under appeal. Therefore, the decision of the Examiner rejecting claims 1-40 is reversed.

REVERSED

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